

CLAIMS

- 5 53
1. A medical diagnostic ultrasound imaging method comprising:
 - (a) acquiring image data for at least two frames, each frame identified with a respective phase of a physiological cycle;
 - (b) constructing a multi-phase, multi-frame data set from the image data by registering the image data based on image motion between the frames,
 - (c) generating a plurality of images from the multi-frame data set, each image associated with a respective phase of the physiological cycle; and
 - (d) displaying the images in sequence to a user.
 - 10 2. The method of Claim 1 wherein (b) comprises:
 - (b1) associating a separate position with each frame of image data; and
 - (b2) creating a plurality of separate multi-frame data sets included in the multi-phase, multi-frame data set, each separate multi-frame data set identified with a respective phase of the physiological cycle.
 - 15 3. The method of Claim 1 wherein (b) comprises:
 - (b1) associating a separate position with each frame of image data associated with one selected phase of the physiological cycle; and
 - (b2) using the positions associated with the one selected phase of the physiological cycle to create the multi-frame, multi-phase data set for all of the image data.
 - 20 4. The method of Claim 1 wherein the multi-phase, multi-frame data set constructed in (b) comprises a 3-D data set.
 - 25 5. The method of Claim 1 wherein the multi-phase, multi-frame data set constructed in (b) comprises an extended field of view data set.
 6. A medical diagnostic ultrasound imaging means comprising:
- 53

means for acquiring image data for at least two frames, each frame identified with a respective phase of a physiological cycle;

means for constructing a multi-phase, multi-frame data set from the image data, said constructing means comprising means for registering the image data based on image motion between frames;

means for generating a plurality of images from the multi-frame data set, each image associated with a respective phase of the physiological cycle; and

means for displaying the images in sequence to a user.

7. The invention of Claim 6 wherein the constructing means comprises:

means for associating a separate position with each frame of image data; and

means for creating a plurality of separate multi-frame data sets included in the multi-phase, multi-frame data set, each separate multi-frame data set identified with a respective phase of the physiological cycle.

8. The invention of Claim 6 wherein the constructing means comprises:

means for associating a separate position with each frame of image data associated with one selected phase of the physiological cycle; and

means for using the positions associated with the one selected phase of the physiological cycle to create the multi-phase, multi-frame data set for all of the image data.

9. The invention of Claim 6 wherein the multi-phase, multi-frame data set comprises a 3-D data set.

10. The invention of Claim 6 wherein the multi-phase, multi-frame data set comprises an extended field of view data set.

11. A medical diagnostic ultrasound imaging method comprising:

536
537

(a) acquiring image data for at least two frames, each frame identified with a respective phase of a physiological cycle;

(b) generating a plurality of extended field of view images from the image data, each image associated with a respective phase of the physiological cycle; and

(c) displaying the images in sequence to a user.

12. The method of Claim 11 wherein (b) comprises:

(b1) associating a separate position with each frame of image data; and

(b2) creating a plurality of separate extended field of view data sets, each data set identified with a respective phase of the physiological cycle.

13. The method of Claim 11 wherein (b) comprises:

(b1) associating a separate position with each frame of image data associated with one selected phase of the physiological cycle; and

(b2) using the positions associated with the one selected phase of the physiological cycle to create the multi-phase extended field of view data set for all of the image data.

14. A medical diagnostic ultrasound imaging system comprising:

(a) means for acquiring image data for at least two frames, each frame identified with a respective phase of a physiological cycle;

(b) means for generating a plurality of extended field of view images from the image data, each image associated with a respective phase of the physiological cycle; and

(c) means for displaying the images in sequence to a user.

15. The invention of Claim 14 wherein the generating means comprises:

means for associating a separate position with each frame of image data; and

09369510 080699

53
54

means for creating a plurality of separate extended field of view data sets, each data set identified with a respective phase of the physiological cycle.

16. The invention of Claim 14 wherein the generating means comprises:

means for associating a separate position with each frame of image data associated with one selected phase of the physiological cycle; and

means for using the positions associated with the one selected phase of the physiological cycle to create a multi-phase extended field of view data set for all of the image data.

0936940-080699

10

add
B₁

add
A₃

add
D₁